APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/551,143	04/14/2000	Hideaki Yoshida	000489	1917

38834	7590	04/08/2004	

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER
JERABEK, KELLY L

ART UNIT	PAPER NUMBER
2612	

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	Applicant(s)
Office Action Summary		09/551,143	YOSHIDA ET AL.
		Examiner	Art Unit
		Kelly L. Jerabek	2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 January 2004*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 April 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date *5*.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1, 3, 8, 11, 13, 21, 23, and 28 have

been considered but are moot in view of the new ground(s) of rejection.

Specification

Applicant is reminded of the proper language and format for an abstract of the
disclosure.

The abstract should be in narrative form and generally limited to a single
paragraph on a separate sheet within the range of 50 to 150 words. It is important that
the abstract not exceed 150 words in length since the space provided for the abstract
on the computer tape used by the printer is limited. The form and legal phraseology
often used in patent claims, such as "means" and "said," should be avoided. The
abstract should describe the disclosure sufficiently to assist readers in deciding whether
there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information
given in the title. It should avoid using phrases which can be implied, such as, "The
disclosure concerns," "The disclosure defined by this invention," "The disclosure
describes," etc.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6, and 28-29 rejected under 35 U.S.C. 102(e) as being anticipated by Weldy et al. US 6,188,804.

Re claim 1, Weldy discloses a color image pickup device (10) including a pixel group placed in an array of a plurality of pixels of photoelectric conversion elements and a color coding array corresponding to the pixel group. The color-coding array is a randomized array and it directly picks up the color image (col. 2, lines 57-67; col. 3, lines 1-10).

Re claim 2, the color-coding array is a color filter array (col. 3, lines 1-2).

Re claim 3, Weldy discloses a color image pickup device (10) including a pixel group placed in an array of a plurality of pixels of photoelectric conversion elements and a color coding array corresponding to the pixel group. The color-coding array is a randomized array and it directly picks up the color image (col. 2, lines 57-67; col. 3, lines 1-10). The color image pickup device (10) also includes color separation means

for performing color separation processing of output signals in accordance with the

random color-coding array (col. 5, lines 60-67).

Re claim 4, see claim 2.

Re claim 5, the color image pickup device (10) includes an output device (20)

that can store the input image including color data on a computer storage medium (col.

3, lines 15-27).

Re claim 6, read-only memory or (ROM) is mentioned as a possible storage

means (col. 3, lines 22-23).

Re claim 28, Weldy discloses a color image pickup device (10) including a pixel

group placed in an array of a plurality of pixels of photoelectric conversion elements and

a color coding array corresponding to the pixel group. The color-coding array is a

randomized array and it directly picks up the color image (col. 2, lines 57-67; col. 3,

lines 1-10). The color image pickup device (10) also includes color separation means

for performing color separation processing of output signals in accordance with the

random color-coding array (col. 5, lines 60-67). The color image pickup device (10)

includes an output device (20) that can store the input image including color data on a

computer storage medium and an interpolation device (18) that corrects pixel defects

within the array (col. 3, lines 15-27; col. 4, lines 9-58).

Re claim 29, see claim 2.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 7 and 30-32 rejected under 35 U.S.C. 103(a) as being unpatentable

over Weldy as applied to claims 5 and 28 in view of Rambaldi US 6,618,084.

Re claims 7 and 31 Weldy discloses all of the limitations as applied to claims 5

and 28 above, however Weldy does not state that the storage means comprises

EEPROM.

Rambaldi discloses in figure 1 a system-architecture for implementing a CMOS

imager. The system-architecture includes an imager (10) including a pixel-array area

sensor (12), an a/d converter (18), a correction block (24) and a memory (26). The

memory (26) stores all of the pixel information of the array (col. 5, lines 30-45). The

memory (26) may comprise EEPROM (col. 5, lines 45-47). Memory consisting of

EEPROM for storing pixel information of an imaging array is well known and used in the

art as evidenced by Rambaldi. Therefore, it would have been obvious to include the

EEPROM memory as disclosed by Rambaldi in the color image pickup device disclosed

by Weldy. Doing so would provide a means for storing array data concerning the

random color-coding array using EEPROM as storage means.

Re claim 30, Weldy discloses all of the limitations as applied to claim 28 above,

however Weldy does not state that the output signal of a fault pixel is supplemented by

using an output signal of the pixel nearest to the fault pixel among the pixels of the

same color as the color of the signal to be supplemented for the fault pixel.

Rambaldi discloses in figure 1 a system-architecture for implementing a CMOS

imager. The system-architecture includes an imager (10) including a pixel-array area

sensor (12), an a/d converter (18), a correction block (24) and a memory (26). Using

this system architecture faulty pixels are masked during generation of an image.

Furthermore, in the case of a color imager the masking operation must be cognizant of

the color of the pixel that is being corrected. Only pixels of the same color that are

closest to the defective pixel are chosen for the mask (col. 11, lines 15-31). Selecting

adjacent pixels of the same color as the faulty pixel to replace the faulty pixel is well

known and used in the art as shown by Rambaldi. Therefore, it would have been

obvious to include the pixel masking method using only pixels of the same color as

disclosed by Rambaldi in the interpolation section of the color image pickup device

disclosed by Weldy. Doing so would provide a means for correcting faulty pixels of a color imager using only pixels of the same color to replace faulty pixels.

Re claim 32, see claim 31.

Claims 8-18, 21-26, and 30 rejected under 35 U.S.C. 103(a) as being unpatentable over Weldy in view of Resnikoff et al. US 4,574,311.

Re claim 8 Weldy discloses a color image pickup device (10) including a pixel group placed in an array of a plurality of pixels of photoelectric conversion elements and a color coding array corresponding to the pixel group. The color-coding array is a randomized array and it directly picks up the color image (col. 2, lines 57-67; col. 3, lines 1-10). However, Weldy fails to state that the randomized array satisfies predetermined array restricting conditions such as minimum density conditions.

Resnikoff discloses in figure 6 a random sensing array imaging system including an array of CCD elements that are in a random array (col. 6, lines 49-68; col. 7, lines 1-24). The CCD array distribution is carried out by selecting points at random using predetermined array restricting conditions such as uniform probability distributions (col. 8, lines 10-39). These conditions include minimum density conditions (col. 8, lines 40-45). Generating a randomized array in an imaging system using predetermined array restricting conditions is well known and used in the art as evidenced by Resnikoff. Therefore, it would have been obvious to include the concept of generating a

randomized array using predetermined array restricting conditions as disclosed by

Resnikoff in the color image pickup device including a random array disclosed by

Weldy. Doing so would provide a means for randomly placing the elements of the CCD

array based on a set of predetermined conditions including minimum density conditions.

Re claim 9, Weldy states that the color-coding array is a color filter array (col. 3,

lines 1-2).

Re claim 10, see claim 8.

Re claim 11, Weldy discloses a color image pickup device (10) including a pixel

group placed in an array of a plurality of pixels of photoelectric conversion elements and

a color coding array corresponding to the pixel group. The color-coding array is a

randomized array and it directly picks up the color image (col. 2, lines 57-67; col. 3,

lines 1-10). The color image pickup device (10) also includes color separation means

for performing color separation processing of output signals in accordance with the

random color-coding array (col. 5, lines 60-67). However, Weldy fails to state that the

randomized array satisfies predetermined array restricting conditions such as minimum

density conditions.

Resnikoff discloses in figure 6 a random sensing array imaging system including

an array of CCD elements that are in a random array (col. 6, lines 49-68; col. 7, lines 1-

24). The CCD array distribution is carried out by selecting points at random using

predetermined array restricting conditions such as uniform probability distributions (col.

8, lines 10-39). These conditions include minimum density conditions (col. 8, lines 40-

45). Generating a randomized array in an imaging system using predetermined array

restricting conditions is well known and used in the art as evidenced by Resnikoff.

Therefore, it would have been obvious to include the concept of generating a

randomized array using predetermined array restricting conditions as disclosed by

Resnikoff in the color image pickup device including a random array disclosed by

Weldy. Doing so would provide a means for randomly placing the elements of the CCD

array based on a set of predetermined conditions including minimum density conditions.

Re claim 12, Weldy states that the color-coding array is a color filter array (col. 3,

lines 1-2).

Re claim 13, see claim 11.

Re claim 14, see claim 12.

Re claim 15, Weldy states that the color image pickup device (10) includes an

output device (20) that can store the input image including color data on a computer

storage medium (col. 3, lines 15-27).

Re claim 16, see claim 15.

Re claim 17, Weldy states that read-only memory or (ROM) is a possible storage

means (col. 3, lines 22-23).

Re claim 18, see claim 17.

Re claim 21, see claim 8.

Re claim 22, see claim 9.

Re claim 23, see claim 11.

Re claim 24, see claim 12.

Re claim 25, see claim 15.

Re claim 26, see claim 17.

Claims 19-20, and 27 rejected under 35 U.S.C. 103(a) as being unpatentable

over Weldy in view of Resnikoff as applied to claims 15, 16, and 25 in view of

Rambaldi US 6,618,084.

Re claims 19,20, and 27 Weldy in view of Resnikoff discloses all of the limitations

as applied to claims 15, 16, and 25 above, however Weldy in view of Resnikoff does not

state that the storage means comprises EEPROM.

Rambaldi discloses in figure 1 a system-architecture for implementing a CMOS

imager. The system-architecture includes an imager (10) including a pixel-array area

sensor (12), an a/d converter (18), a correction block (24) and a memory (26). The

memory (26) stores all of the pixel information of the array (col. 5, lines 30-45). The

memory (26) may comprise EEPROM (col. 5, lines 45-47). Memory consisting of

EEPROM for storing pixel information of an imaging array is well known and used in the

art as evidenced by Rambaldi. Therefore, it would have been obvious to include the

EEPROM memory as disclosed by Rambaldi in the color image pickup device disclosed

by Weldy in view of Resnikoff. Doing so would provide a means for storing array data

concerning the random color-coding array using EEPROM as storage means.

**Claims 33-34 rejected under 35 U.S.C. 103(a) as being unpatentable over
Rambaldi in view of Resnikoff.**

Re claim 33, Rambaldi discloses in figure 1 a CMOS imager (10) including a

pixel array area sensor (12) having two-dimensionally arranged pixels (col. 4, lines 60-

67). In figure 5, Rambaldi discloses the same imager (10) including a pixel array area

sensor (12) including a color separation filter including the primary colors (red, green,

and blue) (col. 11, lines 15-30). However, Rambaldi does not state that the color

separation filter has a random arrangement satisfying minimum density conditions.

Resnikoff discloses in figure 6 a random sensing array imaging system including

an array of CCD elements that are in a random array (col. 6, lines 49-68; col. 7, lines 1-

24). The CCD array distribution is carried out by selecting points at random using

predetermined array restricting conditions such as uniform probability distributions (col.

8, lines 10-39). These conditions include minimum density conditions (col. 8, lines 40-

45). Generating a randomized array in an imaging system using predetermined array

restricting conditions is well known and used in the art as evidenced by Resnikoff.

Therefore, it would have been obvious to include the concept of generating a

randomized array using predetermined array restricting conditions as disclosed by

Resnikoff in the CMOS imager including a color separation filter disclosed by Rambaldi.

Doing so would provide a means for randomly placing the elements of the pixel array

area sensor including a color separation filter based on a set of predetermined

conditions including minimum density conditions.

Re claim 34, the CMOS imager (10) disclosed by Rambaldi includes an a/d

converter (18) for coverting the output of the color image pickup device into digital

signals (col. 5, lines 17-21). The imager (10) also includes a memory device (26) for

storing pixel information and masking defective pixels (col. 5, lines 23-58; col. 11, lines

15-31). Finally, corrected digital image signals are sent to a display unit via image

display circuitry (30) (col. 5, lines 22-28; col. 11, lines 47-58).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Kelly Jerabek whose telephone number is (703) 305-8659. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached at (703)-305-4929.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

The fax number for submitting all Official communications is (703) 872-9306.

The fax number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the Examiner at (703) 746-3059.

KLJ

VU LE
PRIMARY EXAMINER